

Crabb's *English Synonymes*; "Controversial . . . suggests provocativeness, violent differences of opinion, and sometimes the activities of propagandists."—Webster's *Dictionary of Synonyms*—for "controversy" is happily rare among those interested in tobacco (the cigarette-smoking-lung-cancer controversy is an exception which only too sadly justifies the definitions of "Crabb" and "Webster"); but differences of opinion in this field are so common that only *unanimity* of opinion (as in the case of thromboangiitis obliterans) can astonish us. This digression into definition is not without purpose or importance, for a controversy may be resolved by the efforts of knowledgeable and objective judges, whereas differences of opinion among a swarm of writers can only operate as a springboard for further opinion, not as a basis for rational judgment.

With respect to the role of tobacco in the management of peptic ulcer, the clinical opinions expressed may be (more or less arbitrarily) separated into three main categories; by writers in the first category, any tobacco-use is more or less flatly forbidden; by writers in the second group, excessive use is discouraged rather than forbidden, and moderate use of tobacco permitted, either openly or tacitly; and by the third group, tobacco-use is regulated on an individual basis.

Tobacco was said to be contraindicated or prohibited in peptic ulcer (during treatment or forevermore) by the following writers, among others: Rehfuess<sup>176</sup> (1927); Bennett<sup>22</sup> (1928); MacLean, Jones and Fildes<sup>132</sup> (1928); Finkelstein<sup>63</sup> (1930); Hartman<sup>88</sup> (1930); Jordan<sup>107</sup> (1930); S. Harris<sup>66</sup> (1930-31); Ogilvie<sup>162</sup> (1935); Ochsner, Gage and Hosoi<sup>161</sup> (1936); Davis<sup>44</sup> (1939); Spriggs<sup>210</sup> (1940); L. A. Smith and Rivers<sup>200</sup> (1943); Morlock<sup>152</sup> (1944); Portis<sup>169</sup> (1944); Twiss and Par-

sounet<sup>221</sup> (1945); Wilkinson<sup>234</sup> (1948); Weinstein<sup>226</sup> (1951); Olbert<sup>163</sup> (1955); Harrison<sup>87</sup> (1959); and G. McHardy, R. J. McHardy and Browne<sup>144</sup> (1959). This prohibition extended to denicotinized as well as to regular tobaccos (Bernay and Faure<sup>23</sup>, 1937; Couturat<sup>43</sup>, 1937).

Restricted use of tobacco was permitted, or at least not uniformly forbidden, by others (F. W. White<sup>229</sup>, 1919; Hurst<sup>100</sup>, 1923; Eusterman<sup>59</sup>, 1925, 1926; Rowlette<sup>182</sup>, 1928; I. Gray<sup>76</sup>, 1929-30; T. Hunt<sup>99</sup>, 1937; Aaron<sup>1</sup>, 1945; Planck<sup>167</sup>, 1946; Glatzel<sup>74</sup>, 1947; among others).

Although he warned in all cases against immoderate smoking, Rowlette<sup>182</sup> (1928) recommended studying the reaction of the ulcer patient to tobacco; and Kirsner<sup>108</sup> (1958) agreed that the use of tobacco in such patients is dealt with most practicably on an individual basis. To the latter writer, moderate smoking seemed without harm in many instances; excessive smoking, on the other hand, is undesirable. The recommendation of complete abstinence is preferable to an ineffectual suggestion of "decreasing" the quantity of tobacco. Excessive smoking ordinarily reflects increased nervous tension; the important problem, therefore, is relief of the emotional stress. Ordinarily, wrote Boles and Dunbar<sup>30</sup> (1946), tobacco is to be avoided by the ulcer patient of younger years; however, harm from its temperate use by a person past 60 is hard to imagine, considering the lowered acidity of his stomach, and the peace of mind its use affords after years of temperate indulgence. Morlock<sup>153</sup> (1958), noting that for the most part ulcer patients are unwilling to discontinue their use of tobacco, thought some compromise ordinarily must be made in regard to this factor.

Even moderate amounts of tobacco

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may be harmful in susceptible individuals (Eusterman<sup>50</sup>, 1925, 1926). Patients with peptic ulcer who are hypersensitive to tobacco will experience aggravation of their symptoms by the use or overuse of tobacco, and such persons should be enjoined to give up smoking (Morlock<sup>153</sup>, 1958). Whether such "susceptibility" refers to nicotine hypersensitivity or to tobacco idiosyncrasy on the part of the patient is not always clear. Andresen<sup>10</sup> (discussing Roth, Ivy and Atkinson, 1944) stated that he rarely found smoking harmful in ulcer patients, and that these cases were probably explicable on an allergic basis. However, most writers have apparently taken it for granted that nicotine is the active and implicated ingredient of tobacco-smoke.

Regarding the time as well as the degree of tobacco limitation in patients with peptic ulcer, S. Harris<sup>86</sup> (1930-31) felt it wise to instruct ulcer patients to discontinue the use of tobacco for the rest of their lives. After recovery from peptic ulcer, Spriggs<sup>210</sup> (1940) would allow one cigarette after a meal; Douthwaite<sup>51</sup> (1947) would limit smoking to a pipe after breakfast and another after dinner throughout the life of a chronic ulcer patient.

Such writers who have commented on this point appear to be agreed that moderate smoking after meals is less harmful to the ulcer patient than is smoking when the stomach is empty (Rowlette<sup>182</sup>, 1928; T. Hunt<sup>99</sup>, 1937; Brit. Med. J. 2, 1098, 1939; Morlock<sup>153</sup>, 1958).

Although there is a considerable volume of (very conflicting and confusing) evidence concerning the effect or non-effect of smoking on gastric acidity and secretion, the great majority of medical writers has used clinical criteria in assessing the influence of tobacco on the course of the patient's disease. Thus,

I. Gray<sup>76</sup> (1929-30), observing that clinical improvement in some patients with ulcer occurs only after cessation of smoking, remarked that the therapeutic test, and not the chemical and roentgenographic findings, is the criterion as to whether or not the individual should smoke. Schnedorf and Ivy<sup>191</sup> (1939) stated, with respect to the routine prohibition of the use of tobacco by ulcer patients, that one apparently cannot rely on clinical impressions, because the views expressed vary so widely. It is, however, difficult to see just what the physician can substitute for clinical impressions in these cases, and support for this view is afforded by Douthwaite's<sup>51</sup> (1947) sound comment: "Experimental evidence favours harmlessness of smoking to patients with chronic ulcer. Neither rate of emptying of the stomach nor acidity can be shown to be appreciably affected. As against this, it is a spontaneous observation of countless sufferers from duodenal ulcer that the pain, in the active phase of the disease, will always be produced or, if present, aggravated by the smoking of a single cigarette. Again, on inquiring into the change of habits preceding a relapse, how often does one find that the only prophylactic measure which has lapsed has been abstinence from tobacco." Indeed, Ivy<sup>103</sup> (1944) expressed himself as uncertain why so many ulcer patients improved after giving up smoking, which is at least a tacit recognition of the reliability of "clinical impression."

It has been said by some writers (for example, Boles<sup>28,29</sup> 1943, 1948) that tobacco is a major influence in the prevention of healing and the recurrence of peptic ulcer, and by others (for example, R. B. Scott<sup>191a,b</sup>, 1952) that smoking apparently does not affect healing of the lesions. Outside the realm of opinion, Doll, Jones and

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Pygott<sup>19</sup> (1958) tested the effect of smoking on ulcer healing (reduction in size of the ulcer) in patients with gastric ulcers who were regular smokers, and, from their results, concluded that, in some patients, smoking interferes with the healing of a peptic ulcer, and helps to maintain its chronicity. It may also be mentioned that Piper and Raine<sup>106</sup> (1959), after demonstrating that gastric-juice volume, total and free acid, and chloride were significantly increased by smoking, concluded that such a degree of gastric stimulation would be unlikely to fail to influence peptic ulceration, and that their investigation supported the clinical observation of Doll and his colleagues that smoking delays the healing of peptic ulcers.

Friedrich<sup>68</sup> (1934) stated that smoking is contraindicated in patients who have been operated on for gastric ulcer; Moynihan<sup>158</sup> (1923) advised patients not to smoke for 3 months after operation, and then always in strict moderation; Lahey<sup>113</sup> (1945) warned that any patient who has had either radical or conservative surgery for peptic ulcer should adjust his eating, drinking, and smoking habits for the lowering of gastric acidity in order to lessen his chance of having another ulcer develop. In a recent study of subtotal gastrectomy in 115 smokers and 56 non-smokers, Mitty, Rousselot and Delany<sup>151</sup> (1959) found that patients who smoked postoperatively had no more significant digestive complaints than the non-smokers; however, more major late complications occurred in the smokers.

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So far, for the most part, we have discussed, or, rather, canvassed opinion concerning, the role of tobacco in the management of disease; and we have now to turn our primary emphasis to

the influence of tobacco-use on the patient himself. This latter consideration falls into two categories: the effect of smoking, and the effect of ceasing to smoke.

There has long existed the realization that, so far as the smoking patient or person is concerned, one must allow for a balance between the "psychic" benefit derived from smoking, and its "physical" harm (Boston Med. & Surg. J., 161, 231, 1909); also, between the individual pleasure derived from smoking, and the "increased mortality" of smokers often assumed or suggested by statistics (Wells<sup>227</sup>, 1947); between the "tranquilizing" effect of smoking (Kitchen<sup>109</sup>, 1916; Lancet, 1, 339, 1947; J. Am. Med. Assn., 138, 652, 1948; Levy<sup>121</sup>, 1952; Lee and Bryner<sup>117</sup>, 1957; Lancet, 2, 250, 1958; McArthur *et al.*<sup>142</sup>, 1958), and the nervous stress which often accompanies giving up smoking for even the most compelling of reasons. In many individual patients, or classes of patients, as some of our authorities have pointed out, the beneficial effects of continuing to smoke may outweigh the manifest advantages of stopping smoking; and the decision is to be made, not only on the basis of the patient's disease, but with due consideration of the patient-as-a-whole.

From still another point of view, it may be said that smoking may prevent certain permanent undesirable effects of stopping smoking, for example, the danger of neurosis developing in individuals who find themselves unable to give up their habit (Stoll<sup>213</sup>, 1955), or the danger that the increase in eating and body weight which often occurs following giving up smoking may place more "strain" on the heart than the smoking itself (*Med. Proc.*, Johannesburg, 3, 469, 1957). Some psychogenic smokers, upon giving up smoking, become psychogenic eaters instead (Lancet, 2, 282, 1957); the menace of obesity

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in ex-smokers appears to be real and to be causing some recent medical concern; and it is a so far unresolved question whether more persons are engaged in digging their graves with their teeth or with tobacco.

As for the purely temporary discomfort of "withdrawal symptoms" on stopping smoking, this should not be made the basis of any joint physician-patient decision whether the patient shall stop or continue his smoking. The physician's part in this decision has been set forth by Clough<sup>40</sup> (1956): It is our duty as physicians to inform our patients as fully and clearly as possible as to the facts as they are now known, and of the potential risks of smoking, and to let the patients make their own decision, as most of them will do anyway. Positive advice would depend upon the individual's physical condition, his smoking habits, and his reaction to smoking. Clough's advice presupposes that the physician shall keep himself fully and clearly informed as to the facts of the matter, which the latter cannot always find time or medical journals to do.

The main conclusions to be drawn from this survey on the role of tobacco-use in the management of disease are clear enough. In the case of specific

tobaccogenic diseases properly diagnosed, the *cause* of the disease, by definition, tobacco, may be forbidden without doubts and should be prohibited without equivocation. If we define (as it appears we must) a non-tobaccogenic disease as one which occurs indistinguishably in both tobacco-users and non-users, regardless of its respective incidence-rates, then we may conclude, with respect to tobacco-use in the management of non-tobaccogenic but tobacco-aggravated diseases, that there is nothing better than abstinence from tobacco, though sometimes there *may be* something worse: emotional disturbances of one sort or another, or the substitution of an even less desirable habit (for example, over-eating) for that of moderate tobacco-smoking. But, as we have seen, these latter conclusions are often swept aside by a realization that the "psychic" good his habit of tobacco-smoking does a particular patient may be greater than its "somatic" harm. This (on the whole) fairly recent realization on the part of the physician represents the "changing concept" of our title: with tobacco-smoking, as with much else in the practice of medicine, the categorical imperative must sometimes yield to individual considerations.

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## RADIOLOGY

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## ROENTGENOGRAPHIC MANIFESTATIONS OF THE CARTILAGINOUS DYSPLASIAS

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A GROUP of similar skeletal diseases manifested primarily as a severe growth disturbance of enchondral bone formation has been described, particularly in the radiological literature. These cartilaginous dysplasias are often difficult to evaluate and classify, and, in the minds of many, considerable confusion exists in the differential diagnoses. In the majority of cases a careful personal and family history and physical examination, as well as laboratory and Roentgen findings, are necessary to arrive at a plausible answer and even then a definitive categorization of the skeletal dysplasia cannot always be made.

In this review of the literature, I shall present the classical findings of the more important of these diseases as observed on the roentgenogram. When certain criteria are applied, they will, in most cases, permit one to arrive at the most likely diagnosis.

The conditions described in this paper are listed in categories and will be discussed separately along with pertinent roentgenographic examples.

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Other skeletal diseases should perhaps be included, however, the study will be confined to only those which are unequivocally cartilaginous dysplasias and which often present similar and overlapping Roentgen aspects. All of these diseases are generalized in the sense that they affect the cartilaginous precursors of bone in a widespread manner.

The conditions covered are: 1) achondroplasia; 2) osteochondrodys trophy a) Morquio type, b) Hurler type, c) Leri type; 3) dysplasia epiphysalis multiplex; 4) dysplasia epiphysalis punctata; 5) dyschondroplasia; and 6) multiple hereditary osteochondromata.

A brief review of the clinical, laboratory, and pathological findings is presented with each disease entity.

**Achondroplasia.** Synonyms: chondrodystrophia fetalis, micromelia, chondrodystrophic dwarfism, chondrodystrophy.

Achondroplasia is perhaps the most familiar and certainly the most common of the cartilaginous dysplasias.

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